Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

The role of endoscopy in gastroduodenal obstruction and gastroparesis.

Bibliographic Source(s)

ASGE Standards of Practice Committee, Fukami N, Anderson MA, Khan K, Harrison ME, Appalaneni V, Ben-Menachem T, Decker GA, Fanelli RD, Fisher L, Ikenberry SO, Jain R, Jue TL, Krinsky ML, Maple JT, Sharaf RN, Dominitz JA. The role of endoscopy in gastroduodenal obstruction and gastroparesis. Gastrointest Endosc. 2011 Jul;74(1):13-21. [97 references] PubMed

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Definitions for the quality of the evidence (++++, +++O, ++OO, and +OOO) and for the strength of the recommendations ("recommends" or "suggests") are provided at the end of the "Major Recommendations" field.

1. The Practice Committee recommends endoscopy for the evaluation of patients with suspected gastroduodenal obstruction. (++++)
2. The Practice Committee recommends self-expandable metal stent (SEMS) placement for the treatment of malignant gastroduodenal obstruction in those patients with poor performance status and/or short life expectancy. (+++O) For other patients with malignant gastroduodenal obstruction, surgical gastrojejunostomy may offer a more durable result. The palliative approach chosen should depend on local expertise and the patient's prognosis and preferences.
3. The Practice Committee recommends endoscopic biliary SEMS placement before enteral SEMS placement for malignant gastroduodenal obstruction in the setting of established or impending biliary obstruction, when technically possible. (+++O)
4. The Practice Committee suggests palliative decompressive gastrostomy when malignant gastroduodenal obstruction is not amenable to surgical bypass or SEMS placement. (++OO)
5. The Practice Committee suggests endoscopic balloon dilation for the management of benign gastric outlet obstruction (GOO). (++OO)
6. The Practice Committee recommends optimization of medical and dietary measures (e.g., improved glycemic control) before endoscopic interventions for the management of gastroduodenal dysmotility. (+++O)
7. The Practice Committee recommends enteral nutrition for severe and refractory gastroparesis because it is associated with fewer complications and lower cost compared with parenteral nutrition. (+++O)
8. There are insufficient data to make a recommendation regarding the role of botulinum toxin in the treatment of gastroparesis.
9. The Practice Committee recommends endoscopy for the evaluation of infants and children with suspected gastroduodenal obstruction when

radiologic studies are inconclusive or unrevealing or when endoscopic therapy is indicated. (++OO)

Definitions:

Grading of Recommendations Assessment, Development, and Evaluation (GRADE) System for Rating the Quality of Evidence for Guidelines

Quality of Evidence	Definition	Symbol
High Quality	Further research is very unlikely to change confidence in the estimate of effect	++++
Moderate Quality	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate	+++O
Low Quality	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate	++OO
Very Low Quality	Any estimate of effect is very uncertain	+OOO

Adapted from Guyatt GH, Oxman AD, Vist GE, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008;336:924-6.

Recommendation Strength

The strength of individual recommendations is based both on the aggregate evidence quality and an assessment of the anticipated benefits and harms. Weaker recommendations are indicated by phrases such as "the Practice Committee suggests," whereas stronger recommendations are typically stated as "the Practice Committee recommends."

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Gastroduodenal obstruction and gastroparesis

Guideline Category

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Gastroenterology

Internal Medicine

Pediatrics

Intended Users

Physicians

Guideline Objective(s)

To describe the role of endoscopy in known and suspected obstruction of the proximal gastrointestinal tract and gastroparesis, with discussion of special considerations in a pediatric population

Target Population

Patients with known or suspected obstruction of the proximal gastrointestinal tract or gastroparesis

Interventions and Practices Considered

1. Endoscopy
2. Self-expandable metal stent (SEMS) placement (for the treatment of malignant gastroduodenal obstruction)
    - Endoscopic biliary SEMS placement
    - Enteral SEMS placement
3. Surgical gastrojejunostomy
4. Palliative decompressive gastrostomy
5. Endoscopic balloon dilation (for the management of benign gastric outlet obstruction)
6. Optimization of medical and dietary measures
7. Enteral nutrition

Major Outcomes Considered

- Technical success of treatment
- Clinical success of treatment, including changes in symptoms, quality of life, and performance status
- Durability of treatment response
- Toleration of oral intake
- Rates of treatment complications
- Mortality
- Survival

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

In preparing this guideline, a search of the medical literature was performed using PubMed. Additional references were obtained from the

bibliographies of the identified articles and from recommendations of expert consultants. The updated literature time frame is 1990 to 2011.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Grading of Recommendations Assessment, Development, and Evaluation (GRADE) System for Rating the Quality of Evidence for Guidelines

Quality of Evidence	Definition	Symbol
High Quality	Further research is very unlikely to change confidence in the estimate of effect	++++
Moderate Quality	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate	+++O
Low Quality	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate	++OO
Very Low Quality	Any estimate of effect is very uncertain	+OOO

Adapted from Guyatt GH, Oxman AD, Vist GE, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008;336:924-6.

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Guidelines for appropriate use of endoscopy are based on a critical review of the available data and expert consensus at the time that the guidelines are drafted.

Rating Scheme for the Strength of the Recommendations

The strength of individual recommendations is based both on the aggregate evidence quality and an assessment of the anticipated benefits and

harms. Weaker recommendations are indicated by phrases such as "The Practice Committee suggests," whereas stronger recommendations are typically stated as "The Practice Committee recommends."

Cost Analysis

Published cost analyses were reviewed.

Comparative Studies of Endoscopic and Surgical Palliation of Malignant Gastric Outlet Obstruction (GOO)

Multiple studies have compared the cost of endoscopic stenting with those of gastrojejunostomy for palliation and have uniformly found that an endoscopic approach was more cost-effective. A decision-analytic model comparing open gastrojejunostomy, laparoscopic gastrojejunostomy, and endoscopic stenting for malignant gastroduodenal obstruction showed that self-expandable metal stent (SEMS) placement was the most cost-effective strategy and was associated with the lowest rate of complications and the highest success rate over a 1-month period.

Motility Disorders

In patients with isolated gastric dysmotility, postpyloric enteral nutrition is preferable to total parenteral nutrition (TPN), given the costs and potential side effects (e.g., infection, vascular thrombosis, steatohepatitis) associated with TPN.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

This document is a product of the American Society for Gastrointestinal Endoscopy (ASGE) Technology Assessment Committee. This document was reviewed and approved by the Governing Board of the American Society for Gastrointestinal Endoscopy.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate use of endoscopy in gastroduodenal obstruction and gastroparesis to improve outcomes and reduce complications

Potential Harms

Evaluation

High osmolar water-soluble contrast agents (with computed tomography [CT]) can cause severe bronchial irritation and pulmonary edema when inadvertently aspirated in the setting of obstruction and thus should be used with extreme caution.

Treatment

Benign Mechanical Obstruction

Although technical success with immediate symptom improvement is common with balloon dilation for gastric outlet obstruction (GOO) related to peptic ulcer disease, multiple dilations are often required. Perforation rates with balloon dilation in benign peptic strictures range from 3% to 7%, with higher rates corresponding to larger balloon diameter of more than 15 mm.

Malignant Mechanical Obstruction

- Complications of enteral stents for GOO (bleeding, perforation, peritonitis, sepsis, aspiration, pain, biliary obstruction, pancreatitis, cholangitis stent migration, and stent dysfunction [tumor ingrowth, tumor overgrowth, food impaction]) include severe complications (e.g., perforation and bleeding) in approximately 1% of cases. Nonsevere complications (e.g., stent malfunction, pain, and occlusion of the ampullary orifice leading to pancreatitis and/or cholangitis) are fairly common, occurring in approximately one fourth of cases. Stent malfunction caused by tumor ingrowth, food impaction, or stent migration is the most commonly reported complication (17%) and is typically managed by insertion of additional stents and/or clearance of the food impaction. Stent migration within 8 weeks of placement was significantly more common with covered self-expandable metal stents (SEMSs) (currently not available in the United States) compared with uncovered SEMSs (28% versus 3%, Probability [P] = 0.009). Repositioning or removal of distally migrated stents can be attempted when recognized early. Placement of an additional SEMS is usually effective if repositioning fails. Completely migrated stents can cause intestinal obstruction requiring surgical intervention.
- In a study of 370 patients, percutaneous radiologic gastrostomy (PRG) for GOO was reported to have a higher 30-day complication rate than percutaneous endoscopic gastrostomy (PEG) (23% versus 11%, P = 0.038), including infections and inadvertent tube removal.
- In a systematic review comparing enteral stents to gastrojejunostomy for GOO, there were no significant differences in mortality, complication rates, or overall survival. In a retrospective study of 95 patients, those undergoing SEMS placement had a more rapid development of late (>7 days) complications including recurrent obstructive symptoms and need for reintervention during 3 months of follow-up, indicating a more durable effect of gastrojejunostomy. Three prospective, randomized studies comparing SEMS and surgery have been reported. All three studies showed comparable rates of technical success and mortality, and longer hospital stay with surgery. In the recent largest randomized study with longer follow-up, late complications (i.e., recurrent obstruction and need for reintervention) were more common with an SEMS than with gastrojejunostomy, confirming the results of the previous retrospective study suggesting the benefit of surgical gastrojejunostomy in patients with longer life expectancy.

Motility Disorders

- Metoclopramide for medical management of gastroparesis, unlike domperidone, crosses the blood-brain barrier resulting in side effects (e.g., fatigue, drowsiness, irritability, acute dystonic reactions) that may limit clinical use. Infrequently, metoclopramide may produce Parkinson-like symptoms or tardive dyskinesia that may not resolve with discontinuation of the medication and have led to a black box warning from the U.S. Food and Drug Administration recommending that its continuous use not exceed 3 months.
- Although erythromycin is a potent stimulant of gastric emptying, side effects are common with oral use (e.g., nausea, vomiting, abdominal cramping, diarrhea). Furthermore, tachyphylaxis often will limit long-term efficacy.

Contraindications

Contraindications

- Contraindications to self-expandable metal stent (SEMS) placement include those conditions that generally preclude endoscopic procedures (e.g., severe cardiopulmonary disease, perforated viscus).
- Ascites is considered a relative contraindication to percutaneous gastrostomy placement. However, paracentesis before gastrostomy placement may facilitate the successful placement of percutaneous radiologic gastrostomy (PRG) with low complication rates.

Qualifying Statements

Qualifying Statements

- Further controlled clinical studies may be needed to clarify aspects of this guideline. This guideline may be revised as necessary to account for changes in technology, new data, or other aspects of clinical practice.
- This guideline is intended to be an educational device to provide information that may assist endoscopists in providing care to patients. This

guideline is not a rule and should not be construed as establishing a legal standard of care or as encouraging, advocating, requiring, or discouraging any particular treatment. Clinical decisions in any particular case involve a complex analysis of the patient's condition and available courses of action. Therefore, clinical considerations may lead an endoscopist to take a course of action that varies from these guidelines.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Jul

Guideline Developer(s)

American Society for Gastrointestinal Endoscopy - Medical Specialty Society

Source(s) of Funding

American Society for Gastrointestinal Endoscopy

Guideline Committee

Standards of Practice Committee

Composition of Group That Authored the Guideline

Committee Members: Jason A. Dominitz, MD, MHS, *(Chair)*; Norio Fukami, MD; Michelle A. Anderson, MD; Khalid Khan, MD, *(NASPGHAN Representative)*; M. Edwyn Harrison, MD; Vasudhara Appalaneni, MD; Tamir Ben-Menachem, MD; G. Anton Decker, MD; Robert D. Fanelli, MD, *(SAGES Representative)*; Laurel Fisher, MD; Steven O. Ikenberry, MD; Rajeev Jain, MD; Terry L. Jue, MD; Mary Lee Krinsky, DO; John T. Maple, DO; Ravi N. Sharaf, MD

Financial Disclosures/Conflicts of Interest

Dr. Harrison served as a consultant for Fujinon, Inc. Dr. Decker served as a consultant for Facet Biotechnology. Dr. Fanelli received honoraria from Ethicon, served as a consultant for RII Biologics, and is the owner/governor of New Wave Surgical Corp. Dr. Jain served as a researcher for BARRX Medical, Inc. No other financial relationships relevant to this publication were disclosed.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the American Society for Gastrointestinal Endoscopy Web site .

Print copies: Available from the American Society for Gastrointestinal Endoscopy, 1520 Kensington Road, Suite 202, Oak Brook, IL 60523

Availability of Companion Documents

The following is available:

- The role of endoscopy in gastroduodenal obstruction and gastroparesis. CME course. Available from the American Society for Gastrointestinal Endoscopy Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on September 18, 2012.

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